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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/530,778	10/12/2005	Ziya Ramizovich Karichev	U 015717-4	4420

140 7590 06/25/2008

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EXAMINER	
LAIOS, MARIA J	
ART UNIT	PAPER NUMBER
1795	
MAIL DATE	DELIVERY MODE
06/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/530,778	KARICHEV ET AL.	
	Examiner	Art Unit	
	MARIA J. LAIOS	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *20080306*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendment filed on 4 March 2008. Claims 1-26 have been amended. Claims 1-26 are pending.

Claim Objections

2. Claim 16 is objected to because of the following informalities: "carbon container" should be replaced by "carbon carrier". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 states "the improvement wherein the liquid electrolyte is." It is unclear to the Examiner if the Applicant intended to write the claims with the intention to include in the preamble a general description of the elements which are conventional or known, followed by "wherein the improvement comprises" and elements which the applicants considers as new or improved (Jepson claims). The Examiner interprets that the Applicant has not intended to write the claims as Jepson claims.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US7,056,610 relied upon for translation).

Tetzlaff et al. discloses an anode chamber (6) and air chamber (7) with a catalytically active gas diffusion cathode (col.2 lines 7-8, silver as the cathode catalyst), an electrolytic chamber (5) with a liquid electrolyte (col.1 line 15) and an anion electrolytic membrane (4, col. 1 46-47, polyetheretherketone, PEEK). The membrane is positioned between the cathode (2) and the anode (3). The liquid electrolyte is an aqueous alkaline solution (col. 1 lines 50-51). Tetzlaff fail to disclose that the fuel for the anode is a liquid alcohol. Divisek discloses an alkaline direct methanol fuel cell and teaches that the fuel can either be gaseous (as stated in Tetzlaff) hydrogen or a liquid alcohol (methanol, alcohol, col. 1 line 52-54) feed and the direct liquid feed simplifies the system (col. 1 lines 62-63).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a direct methanol fuel of Divisek instead of the gaseous input of Tetzlaff in order to simplify the system by not including a reformer to make the hydrogen gas.

7. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US7,056,610 relied upon for translation) as applied to claim1 above, and further in view of Zaromb (US 4,554,222).

With regard to claims 2 and 3, Tetzlaff as modified by Divisek teaches the alcohol –air fuel cell as discussed above and incorporated herein but fails to disclose electrolyte membrane as a porous matrix, an asbestos matrix, impregnated with an alkaline solution. Zaromb discloses that a separator can be an ion exchange membrane or asbestos (col. 2 lines 35-37). The liquid electrolyte of the electrolytic chamber would then impregnate the asbestos to form the electrolytic membrane.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the ion exchange membrane of Tetzlaff as modified by Divisek with the asbestos matrix of Zaromb because the two kinds of separators are art recognized equivalents. See MPEP 2144.06.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US 7,056,610 relied upon for translation) as applied to claim 4 above, and further in view of Xing et al. (Hydrogen/Oxygen polymer electrolyte membrane fuel cells (PEMFCs) based on alkaline doped polybenzimidazole (PBI).

Tetzlaff modified by Divisek disclose the ion exchange membrane as anion exchange membrane as discussed above and incorporated herein but fails to disclose the membrane as polybenzimidazole doped with OH ions. Xing et al. discloses a polymer electrolyte membrane

fuel cell and teaches the use of PBI doped with an alkaline solution and teaches it exhibits a high ionic conductivity (lines 1-6 of Conclusion section) and that it is cheaper (line 1-4 of Introduction section).

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the membrane of Tetzlaff modified by Divisek with the PBI doped with alkaline solution of Xing et al. because it is cheaper and has a high ionic conductivity.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US7,056,610 relied upon for translation) as applied to claim 1 above, and further in view of Witherspoon et al. (US 3,985,578).

Tetzlaff modified by Divisek disclose the cathode discussed above and incorporated herein but fails to disclose the cathode as a two layer gas diffusion layer with a hydrophilic layer next to the electrolyte chamber and the active material facing the air chamber. Witherspoon et al. discloses a fuel cell with a liquid alkaline electrolyte (col. 1 line 41) and uses a layered cathode with the layer closest to the liquid electrolyte as hydrophilic layer (30) and the second layer of electro catalytic carbon substrate (32, col. 3 lines 31-36). By employing a hydrophilic layer next to the electrolyte, the hydrophilic layer would prevent the electrolyte from entering the active material section of the cathode and thus the flooding.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the hydrophilic layer of Witherspoon to the cathode of Tetzlaff modified by Divisek in order to prevent flooding of the cathode because the liquid would saturate the hydrophilic layer and not penetrate into the active material layer.

1. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US 7,056,610 relied upon for translation) as applied to claim1 above, and further in view of Yi et al. (US 20010004501 A1)

Tetzlaff modified by Divisek disclose the cathode discussed above and incorporated herein but fails to disclose the cathode as a two layer gas diffusion layer with a hydrophilic layer next to the air chamber and the active material facing the electrolyte chamber. Yi et al discloses a fuel cell and teaches a two layered system with the cathode catalyst (74) next to the electrolyte and a hydrophilic layer (102) next to the air inlet in order to draw the liquid.

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a hydrophilic layer next to the air chamber because this would draw the liquid into the cathode.

10. Claims 8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US 7,056,610 relied upon for translation) as applied to claim1 above, and further in view of Xing et al. (Hydrogen/Oxygen polymer electrolyte membrane fuel cells (PEMFCs) based on alkaline doped polybenzimidazole (PBI) and Ovshinsky et al. (US 2002/0064709 A1).

With respect to claim 8, Tetzlaff modified by Divisek disclose the structure of a fuel cell as discussed above and incorporated herein. Specifically, Tetzlaff discloses a membrane (4) next to anode active material (3) as seen in figure 2. Tetzlaff fails to disclose this material a PBI and that the active material as 3-7 weight percent fluoroplastic. Xing et al. discloses a polymer

electrolyte membrane fuel cell and teaches the use of PBI doped with an alkaline solution and teaches it exhibits a high ionic conductivity (lines 1-6 of Conclusion section) and that it is cheaper (line 1-4 of Introduction section).

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the membrane of Tetzlaff modified by Divisek with the PBI doped with alkaline solution of Xing et al. because it is cheaper and has a high ionic conductivity.

Tetzlaff modified by Divisek and Xing et al. fail to disclose the active material as 3-7 weight percent fluoroplastic.

Ovshinsky discloses the use of PTFE as the binder for an anode with the weight percent in the range of 2 – 30 in order to prevent the leakage of the electrolyte into the anode chamber (Paragraph 56).

It would have been obvious to one of ordinary skill at the time of the invention to include a binder in the anode with the weight percent of 2-30 in order to prevent the leakage of the electrolyte into the anode chamber.

With regard to claim 10, Tetzlaff modified by Divisek discloses the diffusion layer is intimately joined by with the electrolyte (col. 2 line 66) but fails to disclose a diffusion layer/porous nickel band filled with polybenzimdazole (PBI) and 3-7 weight percent of fluroplastic in the active material. Xing et al. discloses a polymer electrolyte membrane fuel cell and teaches the use of PBI doped with an alkaline solution and teaches it exhibits a high ionic conductivity (lines 1-6 of Conclusion section) and that it is cheaper (line 1-4 of Introduction section).

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the membrane of Tetzlaff modified by Divisek with the PBI doped with alkaline solution of Xing et al. because it is cheaper and has a high ionic conductivity.

Tetzlaff modified by Divisek and Xing et al. fail to disclose the active material as 3-7 weight percent fluoroplastic and the nickel substrate.

Ovshinsky discloses a foamed nickel substrate, (Paragraph 46) and the use of 2 -30 weight percent of the binder (polytetrafluoroethylene, PTFE) for the anode in order to prevent the electrolyte from entering the anode chamber (Paragraph 56).

It would have been obvious to one of ordinary skill at the time of the invention to have the fuel cell of Tetzlaff modified by Divisek and Xing et al with the foamed nickel substrate of Ovshinsky filled with the PBI in order to prevent leakage of the electrolyte into the anode chamber and the porous nickel support would give a high surface area for catalytic reactions to occurs.

1. Claim 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US 7,056,610 relied upon for translation) as applied to claim 1 and further in view of Koschany et al. (US 6,183,898 B1).

With regard to claim 9, Tetzlaff modified by Divisek teaches the structure of the fuel cell as stated above and incorporated herein. Tetzlaff discloses the membrane next to the anode therefore it is also part of the anode. Tetzlaff modified by Divisek but fails to disclose the anode having a 2-7 percent PBI and the electrolytic membrane made with PBI. Koschany discloses that

PEEK- a polyether ketone) and PBI are functional equivalent of each other (col. 3 lines 19-21) and discloses the amount of binder from 2 to 50% mass (col. 3 line 34). The binder material is the same material as the membrane material and this will increase the ionic conduction through the membrane.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the electrolytic membrane of modified Tetzlaff with a PBI membrane of Koschany as it is a functional equivalent of PEEK for a membrane because PBI and PEEK are an art recognized equivalent. See MPEP 2144.06.

2. Claim 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US 7,056,610 relied upon for translation) as applied to claim 1 and further in view of Ovshinsky et al. (US 2002/0064709 A1) and Koschany (US 6,183,898 B1).

With regard to claim 11, Tetzlaff modified by Divisek teaches the diffusion layer is intimately joined by with the electrolyte (col. 2 line 66) but fails to disclose a diffusion layer/porous nickel band filled with polybenzimdazole (PBI) and 2-7 weight percent of PBI in the active material. Ovshinsky discloses a foamed nickel substrate, (Paragraph 46) and the use of 2 -30 weight percent of the binder (polytetrafluoroethylene, PTFE) for the anode in order to prevent the electrolyte from entering the anode chamber (Paragraph 56). Koschany discloses that PTFE and PBI are binder material and have an equivalent function (col. 3 lines 19-21).

It would have been obvious to one of ordinary skill at the time of the invention to have the to have the fuel cell of Tetzlaff modified by Divisek with the PBI of Koschany with the foamed nickel substrate of Ovshinsky filled with the PBI in order to prevent leakage of the electrolyte into the anode chamber and the porous nickel support would give a high surface area for catalytic reactions to occurs

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US 7,056,610 relied upon for translation) as applied to claim 1 above and further in view of Zaromb (US 4,554,222) and Koschany (US 6,183,898 B1).

With regard to claim 12, Tetzlaff as modified by Divisek discloses the alcohol –air fuel cell as discussed above and incorporated herein and teaches the membrane/electrolyte can be diffused into the electrode but fails to disclose electrolyte membrane as a porous matrix, an asbestos matrix, impregnated with an PBI solution and a binder of floroplastic and PBI. Zaromb discloses that a separator can be an ion exchange membrane or asbestos (col. 2 lines 35-37). One of ordinary skill would know to impregnate the asbestos material with an electrolyte such as PBI, which is a functional equivalent of PEEK ,disclosed by Divisek, in order to promote the reaction of the cell. Koschany discloses that Poly ether ketones and PBI are binder materials and have an equivalent function (col. 3 lines 19-21) and can have a mass ratio of 1:100-100:1 in the electrode (col. 33-35).

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the ion exchange membrane of Tetzlaff as modified by Divisek with the asbestos matrix

of Zaromb because asbestos and the ion exchange membrane are art recognized equivalents. See MPEP 2144.06.

11. Claims 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US7,056,610 relied upon for translation) as applied to claim1 above, and further in view of Ozin et al (4,569,924).

With regard to claims 14-16 Tetlaff discloses Tetzlaff as modified by Divisek discloses the fuel cell as discussed above and incorporated herein wherein the catalyst is silver but fails to disclose the silver is 7-18 weight percent on the carbon carrier and the surface area is 60-80 m^2/g. Ozin et al. discloses a silver-carbon catalyst with a 0.1-15 weight percent (col. 6 lines 26-30) for use in a fuel cell as teaches that the size will determine the efficiency of the fuel cell (col. 7, lines 18-29) that shows by making the size/surface a result effect variable. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).
It would have been obvious to one of ordinary skill in the art at the time of the invention to use the silver –carbon catalyst of Ozin in the fuel cell of in place of silver in modified Tetzlaff in order to increase the overall surface area of the silver in the electrode.

12. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US 7,056,610

relied upon for translation) as applied to claim 1 above and further in view of Solomon et al. (US 4,615,954).

With regard to claims 17 –19, Tetzlaff as modified by Divisek teach the fuel cell with a silver cathode catalyst as discussed above and incorporated herein but fails to disclose a pyropolymer on a carbon carrier with a 10-20 weight percent and a surface area of 60-80 m^2/g. Solomon et al. discloses catalyst used for a gas diffusion electrode in which the catalyst is cobalt tetramethoxyphenyl porphyrin on carbon with a 5-25 percent of the catalyst and is an art equivalent catalyst of silver (col. 3 lines 30-40).

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the silver catalyst of Tetzlaff modified by Divisek with a cobalt tetramethoxyphenyl porphyrin – carbon catalyst because cobalt tetramethoxyphenyl porphyrin – carbon catalyst is an art recognized equivalent of silver as a fuel cell catalyst. See MPEP 2144.06.

It would have been obvious to one of ordinary skill to change the size of the carbon to have a surface area of 60-80 m^2/g instead of 1000 m^2/g as in order to increase the overall surface area of the catalyst in the electrode.

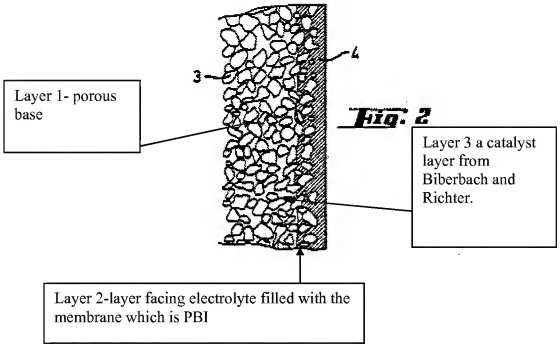
13. Claims13 and 20-25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US 7,056,610 relied upon for translation) as applied to claim 1 above and further in view of Biberbach (6,814,777) and Richter (US 3,673,116)

With regard to claims 13, and 20-25 Tetzlaff as modified by Divisek teaches the fuel cell as discussed above and incorporated herein but fails to disclose a catalyst for the anode as a nickel ruthenium alloy. Gray discloses a catalyst for a cathode with Nickel ruthenium alloy a Biberbach discloses the a Pt-Ru alloy that is an effective catalyst in a fuel cell system with the size of a Pt:Ru as 5.2 nm and a BET surface area of greater than 40 m^2/g (col.2 line 43, col. 7 line 8, in the table) and exhibits long term stability in DMFC (col. 7 line 3)
Richter discloses an effective catalyst for a fuel cell as Raney nickel aluminum molybdenum (col. 1 lines 42), which is more effective than Raney nickel alone (col. 1 line 45).
It would have been obvious to one of ordinary skill in the art to combine the Pt:Ru and the Raney Ni-Al-Mo with the appropriate compositions in order to make an effective and optimal catalyst for a fuel cell. It is prima facie obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition which is to be used for the very same purpose *In re Kerkhoven 205 USPQ 1069, 1072*. It has been held in the courts that when the general conditions of a claim are similarly disclosed in the prior art, it is not inventive to optimize general conditions as concentration. *In re Aller, Lacey and Hall, 105 USPQ 233,235.*

14. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tetzlaff et al. (US 5,656,389) in view of Divisek (WO01/61776 – US equivalent document US 7,056,610 relied upon for translation), Biberbach (6,814,777) and Richter (US 3,673,116) as applied to claim 13 above, and further in view of Xing et al. (*Hydrogen/Oxygen polymer electrolyte membrane fuel cells (PEMFCs) based on alkaline doped polybenzimidazole (PBI)*.

The disclosures of Tetzlaff, Divisek, Biberbach and Richter as discussed above and incorporated herein.

Modified Tetzlaff discloses an porous anode (3) with an electrolyte layer/the layer facing the electrolyte (4) and discloses the catalyst may be embedded in the ion exchanger in part (col. 1 lines 66-67) this would then make a layer of the catalyst and the ion exchange member in addition to the other two. Tetzlaff fails to disclose the electrolytic membrane as PBI.



Xing et al. discloses a polymer electrolyte membrane fuel cell and teaches the use of PBI doped with an alkaline solution and teaches it exhibits a high ionic conductivity (lines 1-6 of Conclusion section) and that it is cheaper (line 1-4 of Introduction section).

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the membrane of Tetzlaff modified by Divisek with the PBI doped with alkaline solution of Xing et al. because it is cheaper and has a high ionic conductivity.

Response to Arguments

4. Applicant's arguments, see pages 11 and 12 pertaining to claims 5-7, filed 4 March 2008, with respect to the rejection(s) of claim(s) 6 and 7 under USC 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the clarification of the terminology hydrophilic barrier layer. In the preceding office action the examiner took the meaning of hydrophilic barrier layer to mean a hydrophobic layer because of the word barrier which would imply that water would be prevented from entering.

With respect to arguments pertaining to claims 1 and 4 (pages 7-10), Applicant argues that Tezlaff does not discuss the problem facing AAFC. Divisek discloses the input can be either a gas or liquid fuel in an alkaline direct methanol fuel cell. Divisek does not destroy the features of Tezlaff because he teaches that both liquids and gases can be the fuel.

With respect to arguments pertaining to claim 4 (Tetzlaff teaches away from the use of an anion exhchange membrane). Even though Tetzlaff states that the cation exchanger member provides better stability Tetzlaff still teaches the anion exchanger.

5. With respect to arguments pertaining to claims 2 and 3, in response to applicant's argument that Zaraomb applies to water consuming hydrogen batteries is nonanalogous art, it has

been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the materials are both for separators.

With respect to arguments pertaining to claims 8 and 10, applicant argues that the PTFE is a separate layer (2) than the active material (3) and points to column 10 lines 54-60 equivalent of paragraph 58 of US 2002/0064709. Paragraph 58 also states that the PTFE and can be intermixed into one material therefore it is not on the active layer but within. Kerres reference is not used in this rejection.

6. With regard to arguments pertaining to claims 9 and 11-12, Applicant argues that the PBI is located on the active layer but the claim states that "the anode comprises an active layer, comprising 2-7 wt% of polybenzimidazole" which implies that the PBI is in the anode active layer and not a layer itself. Therefore the fact that it is used as a binder reads on the claim since it is with in the active material.

It has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the materials are both for separators.

With respect to arguements pertaining to claims 13 and 20-25, Applicant argues that platinum is not in claim 13. However claim 13 as written **comprises** of an alloy of nickel and ruthenium but

does not exclude platinum from being part of the alloy. As to the weight percentages one of ordinary skill will be able to optimize the catalyst.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA J. LAIOS whose telephone number is (571)272-9808. The examiner can normally be reached on Monday - Thursday 10 am -7 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MJL
/Susy Tsang-Foster/

Supervisory Patent Examiner, Art Unit 1795